

CALIFORNIA'S NON-FUEL MINERAL PRODUCTION 2000

By Susan Kohler, Senior Geologist
California Department of Conservation
Division of Mines and Geology, Sacramento, California

Based on the U.S. Geological Survey's (USGS) preliminary data for 2000, California ranked first among the states in non-fuel mineral production, accounting for approximately 8.4 % of the United States' total. Mineral production for California amounted to \$3.38 billion, about a 1% increase from the previous year. Production of at least 25 types of industrial minerals accounted for about 95 % of the total value, with metals accounting for 5 % of the total. California was the only producer of boron, rare earth concentrates, and asbestos, and continued to lead the nation in the production of sand and gravel, portland cement, diatomite, and natural sodium sulfate. California ranked third in the nation for gold production behind Nevada and Utah, first and second, respectively. Other minerals produced in California include bentonite clay (including hectorite), common clay, crushed stone, dimension stone, feldspar, fire clay, fuller's earth, gemstones, gypsum, iron ore, kaolin clay, lime, magnesium compounds, perlite, pumice, pyrophyllite, salt, silver, soda ash, talc, and zeolites.

There are about 1,000 active mines producing non-fuel minerals in the state. Approximately 11,090 people are employed at these mines and associated processing plants.

INDUSTRIAL MINERALS

Construction sand and gravel was California's leading industrial mineral with a total value of \$1 billion produced for the year, an 11.4% increase from 1999 (final USGS data). Sand and gravel production increased by about 13.6 million tons, or 8.5%. Vulcan Materials Company/Western Division's (formerly Vulcan Materials Company/CalMat Division) Boulevard operation (Los Angeles County) led the state and the nation in sand and gravel production. Portland cement was the second largest industrial mineral produced with a total production of 12.1 million tons valued at about \$865 million. Boron, valued at \$500 million ranked third, and crushed stone ranked fourth with a value of \$403 million.

Teichert Aggregates continued its permitting process for its Lincoln project, a 720-acre aggregate site about 4 miles north of the town of Lincoln (Placer County). The project calls for the extraction of 37 million tons of construction alluvial sand and gravel, and 122 million tons of crushed granite aggregate over a period of 85 years. The final EIR is expected to be completed in the summer of 2001.

Amount and value of non-fuel mineral production for 1998, 1999, 2000.

Mineral		1998		1999		2000 ²	
		Quantity	Value (thousands \$)	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)
Asbestos	short tons	6,400	W	7,900	W	6,000	W
Boron Minerals	short tons	647,200	496,000	681,300	630,000	691,300	498,400
(B ₂ O ₃)							
Cement:							
Masonry	short tons	452,000	39,600	^e 513,800	^e 38,300	540,000	40,000
Portland	short tons	11,044,000	745,900	^e 11,344,700	^e 816,900	12,127,000	865,000
Clays							
Bentonite	short tons	32,000	2,700	33,900	2,500	25,000	2,300
Common	short tons	1,012,000	9,600	1,017,900	9,400	914,000	13,100
Gemstones		NA	1,800	NA	1,100	NA	1,300
Gold ³	troy ounces	⁴ 604,000	⁴ 177,900	562,600	157,400	553,000	154,800
Gypsum ⁵	short tons	2,700,900	17,800	3,561,800	18,700	3,920,600	20,800
Rare-earth Metal							
concentrates	short tons	^e 5,500	^e 14,300	W	W	W	W
Sand and gravel:							
Construction	short tons	148,948,000	800,000	159,505,300	897,300	173,092,000	1,000,000
Industrial	short tons	1,918,000	40,400	1,972,400	43,700	1,991,000	43,900
Silver ³	troy ounces	707,300	3,600	257,200	1,300	321,500	1,500
Stone:							
Crushed	short tons	60,748,000	344,000	66,452,100	388,200	67,252,000	403,000
Dimension	short tons	31,400	4,700	32,400	4,900	37,379,000	5,400
Combined value of diatomite, feldspar, fire clay, fuller's earth, iron ore (usable), kaolin, lime, magnesium compounds, perlite (crude), pumice and pumicite, salt, soda ash, sodium sulfate, talc and pyrophyllite, zeolites, and values indicated							
symbol W		XX	289,600	XX	341,500	XX	331,700
Total		XX	2,987,900	XX	3,351,200	XX	3,381,200
¹ Production as measured by mine shipments, sales, or marketable production (including consumption by producers). ² Quantity data are rounded to the nearest 100; values are rounded to the nearest \$100,000. ³ Recoverable content of ores, etc. ⁴ Data from California Department of Conservation, Division of Mines and Geology. ⁵ Data modified from U.S. Geological Survey Mineral Information Service, includes calcined, byproduct and crude gypsum. ⁶ Preliminary. ^e Estimate. NA=Not available. W=Withheld to avoid disclosing company proprietary data; value included with "combined value" data. XX = Not applicable.							

Modified from Mineral Industry Surveys: California, U.S. Geological Survey.

CEMEX, Inc. (formerly Transit Mix Concrete Company, a division of Southdown Inc.,) continued its permitting process for the proposed Soledad Canyon sand and gravel mining project (Los Angeles County). If approved, approximately 56 million tons of construction-grade aggregate material will be mined from a 460-acre site over a period of 20 years. The project will also include a concrete batch plant.

Teichert Aggregates and Granite Construction Company received mining permits to extract sand and gravel from the ancestral American River (Sacramento County). Teichert Aggregates' Aspen V South 273-acre site, was permitted in January and Granite Construction Company's 404-acre Vineyard site, was permitted in February.

Robertson's Ready Mix was awarded the contract to excavate three pits for the county owned Mid-Valley Sanitary Landfill expansion in the city of Rialto (San Bernardino County). The excavated material is sand and gravel that will be processed on site and sold for construction-grade aggregate. The landfill expansion will provide an estimated 80-100 million tons of aggregate reserves to the San Bernardino area over the 25-35 year life of the landfill.

MolyCorp Inc.'s world-class Mountain Pass rare earth mine (San Bernardino County) obtained a temporary permit to mine bastnaesite ore for a 3-month period starting in December 1999. The mined ore kept the plant in operation in a limited capacity through 2000. MolyCorp is obtaining a permit to expand its operation, which will include an enlargement of the current pit, and an on-site tailings pond. The Mountain Pass Mine is the only producer of rare earths in the United States.

Calaveras Materials Inc.'s Woolstenhulme Ranch sand and gravel project (Merced County) was granted a permit in November to mine 14 million tons of aggregate over a period of 25-30 years. The material will be processed at Calaveras Materials Inc.'s River Rock Plant near Snelling. Mining began at the site in March 2001.

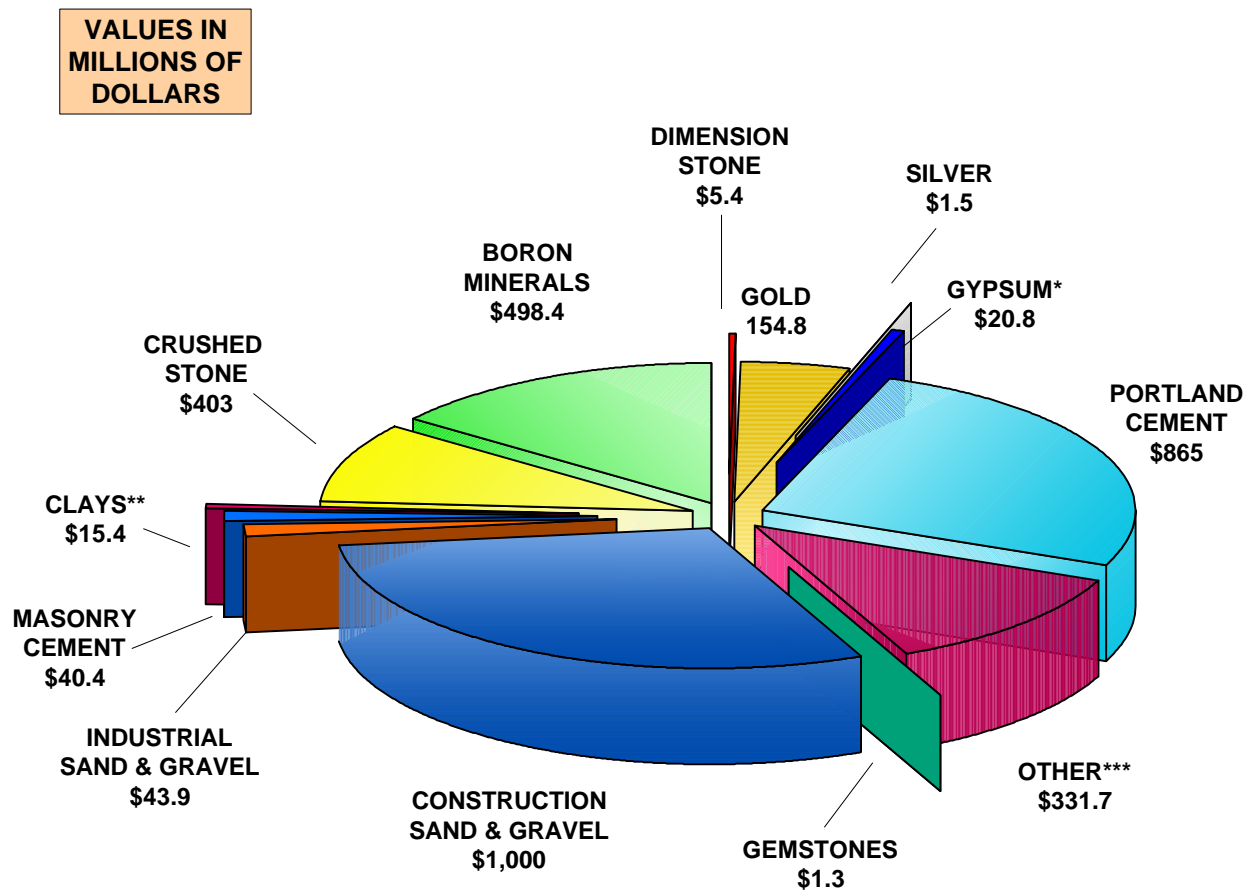
METALLIC MINERALS

Newmont Gold Company's Mesquite Mine (Imperial County) continued to lead the state in gold production for the year. Homestake's McLaughlin Mine (Napa, Lake, and Yolo counties) was the second largest gold producer in the state followed by Viceroy Gold Corporation's Castle Mountain Mine (San Bernardino County).

The Newmont Gold Company ceased mining at the Mesquite Mine in the fall. Approximately 3 million ounces of gold has been produced from the mine since production began in 1986. Residual heap leaching will continue into 2003.

CALIFORNIA NON-FUEL MINERALS 2000

Total Value \$3.38 Billion



Data from U.S. Geological Survey
Mineral Information Service
(preliminary data)

*****OTHER Includes:**

Asbestos, diatomite, feldspar, fire clay, fuller's earth, iron ore, kaolin, lime, magnesium compounds, perlite, pumice and pumicite, pyrophyllite, rare earths, salt, soda ash, talc, sodium sulfate and zeolites.

*Data modified from U.S. Geological Survey Mineral Information Service; includes calcined, byproduct and crude gypsum

**Excludes fire clay, kaolin, and fuller's earth

The U.S. Bureau of Land Management (BLM) recommended rejection of the proposed Glamis Imperial gold mine project (Imperial County) in a November final environmental impact report. The BLM reports that the project would cause significant adverse impacts to Native American archeological and cultural resources. Glamis Imperial Corp. has spent about \$14.2 million on the mine project, which began the permitting process in 1996.

Other metallic minerals produced in the state include silver and iron. All the iron produced in 2000 was used in the production of portland cement. All silver produced was a byproduct of gold production.

MINING EVENTS

West Coast Aggregate's Freeman Quarry (Santa Clara County) began mining operations in July. Construction of a permanent plant site is expected to begin in the summer of 2002.

The Granite Rock Company celebrated its 100-year anniversary in February. The celebration marked the 100th year of continuous operation at the A.R. Wilson Quarry (San Benito County). The Wilson Quarry is California's largest rock quarry.

CEMEX, Inc. (formerly Southdown Inc.) opened its new cement terminal in Sacramento in June. The facility has a holding capacity of 8,000 tons. This state-of-the-art facility features automatic and dust free loading technology. Cement is transported by rail over 400 miles from CEMEX's Victorville Plant in San Bernardino County.

ACQUISITIONS AND NAME CHANGES

- CEMEX, Inc., a large Mexico-based company, purchased Southdown, Inc. for \$2.6 billion in November. The acquisition included: Southdown, Inc.'s Victorville cement plant, the Black Mountain, White Mountain, and Alvic limestone quarries in Apple Valley (San Bernardino County), the Quartzite Mountain silica deposit near Victorville (San Bernardino County), the Transit Mixed Azusa sand and gravel mine (Los Angeles County), and the Transit Mixed Concrete Moorpark sand and gravel mine (Ventura County). CEMEX, Inc.'s newly acquired Victorville cement plant is undergoing a 1-million-ton-per-year plant expansion, which will raise the plant capacity to 3.2 million tons per year. The expansion is expected to be operational in the fall of 2001.
- United Metro Materials acquired Solano Concrete Company, Inc. The purchase included a 1-million-ton-per-year sand and gravel mine, (Yolo County), an asphalt plant, and two ready-mix plants in northern California.

- Vulcan Materials/Cal Mat Division officially changed its name to Vulcan Western Division. Vulcan Materials acquired Cal Mat in January 1999.
- RMC Lonestar officially changed its name to RMC Pacific Materials.
- Rheox, owner of the Hectorite Mine (San Bernardino County) officially changed its name to Elementis Specialties in July. Rheox was acquired by Elementis in January 1998. The Hectorite Mine is believed to contain the world's largest commercial deposit of hectorite clay.

MINE AND PLANT CLOSURES

The Weber Creek rock quarry (El Dorado County) was ordered by the county to stop operations in June. The order came after a very long controversial battle between local government, state, and private industry concerning the enforcement of the Surface Mining and Reclamation Act (SMARA).

Avocet Tungsten, Inc.'s Pine Creek Mine (Inyo County) shut down its ore processing plant in July. The company cited competition from foreign sources and the U.S. government selling of stockpiled ore as the main reasons for its closure. No mining has taken place since the mine closed in 1990.

LEGISLATION

On July 20th, the California Air Resources Board (CARB) eliminated the use of any ultramafic rock containing detectable (0.25 %) asbestos for road surfacing and landscaping. The measure came after the Environmental Protection Agency (EPA) found high levels of asbestos in the air around gravel roads in El Dorado and Calaveras counties. CARB initiated a similar measure in 1990, limiting the asbestos content in surfacing rock to 5%. Asbestos-containing rock can still be used for non-surface applications such as riprap, road base, and drain rock.

California's aggregate demand is expected to increase considerably with Governor Davis' Traffic Congestion Relief Plan. The plan, announced in April, will fund nearly 100 high-priority transportation projects throughout the state at a cost of \$5.3 billion. The anticipated increase in aggregate demand has sparked an aggregate rush throughout the state, particularly in the Los Angeles and San Francisco Bay regions where about 70% of the funds will be allocated.

MINERAL RESOURCE CONSERVATION

Siting and permitting of mine operations throughout the state continue to be locally controversial. The leading issues include intense land use competition,

wide ranging environmental concerns, surface water and groundwater issues, as well as noise, dust, and truck-traffic in populated areas. The California Department of Conservation's Division of Mines and Geology (DOC/DMG) Mineral Land Classification Project (a mandate of SMARA) continues to provide lead agencies with mineral resource maps, which have proved to be of great value in land-use planning and mineral conservation. In 2000, DMG completed Mineral Land Classification reports of mineral resources in El Dorado, Kern, and Tehama counties. During 2000, classification projects were ongoing in Lassen, Solano, Napa, Sonoma, Marin and San Bernardino counties. In addition to the ongoing classification reports, DMG has been developing a statewide aggregate resource and demand map. The map should be available in the summer of 2001.